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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,567	03/17/2004	Norio Yoshikawa	008312-0308796	1900

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EXAMINER

KAYRISH, MATTHEW

ART UNIT	PAPER NUMBER
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2627

DATE MAILED: 10/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/801,567	Applicant(s) YOSHIKAWA, NORIO	
	Examiner Matthew G. Kayrish	Art Unit 2627	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 14-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 14-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments with respect to claims 1 and 14 have been considered but are moot in view of the new ground(s) of rejection. Claims 1-4, 6, 7 and 14-18 have been amended; claims 8-13 have been cancelled. This rejection is made FINAL.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Butler et al (US Patent Number 6529345).

Regarding claim 1, Butler et al disclose:

A disc device comprising;

A disc (figure 2, item 118);

A driving section configured to support and rotate the disc (column 1, lines 18-20);

A head configured to record and reproduce information onto and from the disc (column 1, lines 24-27); and

A case containing the disc, the driving section and the head, the case including:

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(a) A case main unit (figure 2, item 123) having an opening (disc [118], VCM [112], and actuator arm [122] are supported within the opening); and

(b) A cover secured to the case main unit (figure 2, item 124), closing the opening and opposing the disc (see figure 2), and

The cover including:

(a) A first arcuate stepped portion (figure 2, item 132) opposing an outer periphery of the disc;

(b) A second arcuate stepped portion (figure 2, lower arcuate step just inside of peripheral bead [132], but along outside of depression [126]) located closer to the disc than the first stepped portion (see figure 2); and

(c) A third arcuate stepped portion (figure 2, depression [126]) located closer to the disc than the second stepped portion.

Wherein the first, second and third arcuate stepped portions are formed concentric with the disc (figure 2, stepped portions are concentric with the disc).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-7 and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butler et al, in view of Takekado (Japanese Patent Number JP 2003085938 A).

Regarding claim 2, Butler et al fails to specifically disclose:

Wherein the first, second, and third arcuate stepped portions are configured to concentrically extend through at least 180° away from a movement route of the head, opposing the disc (column 3, lines 46-57).

Takekado discloses:

Wherein the first, second, and third arcuate stepped portions are configured to concentrically extend through at least 180° away from a movement route of the head, opposing the disc (column 3, lines 46-57).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Butler et al with concentric stepped portions which extend through 180°, as taught by Takekado, because this will suppress turbulences, caused by the rotation of the disc, over a large range. This will provide a greater amount of overall suppression.

Regarding claim 3, Butler et al disclose:

The disc device according to claim 2, wherein the second arcuate stepped portion is provided inside the first arcuate stepped portion (see figure 2), and the third arcuate stepped portion is included in the second arcuate stepped portion (see figure 2).

Regarding claim 4, Butler et al fails to disclose:

The disc device according to claim 3, wherein the a fourth substantially circular stepped portion is provided inside the second arcuate stepped portion, the fourth stepped portion configured to oppose a hub used to attach the disc to the driving section.

Takekado discloses:

The disc device according to claim 3, wherein the a fourth substantially circular stepped portion (figure 1, labeled item C) is provided inside the second arcuate stepped portion, the fourth stepped portion configured to oppose a hub used to attach the disc to the driving section.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an elevated substantially circular portion in the center region of the cover, as taught by Takekado, because this will help to avoid scratching of the hub and the cover when rotating the disc.

Regarding claim 5, Butler et al fails to disclose:

The disc device according to claim 4, wherein the fourth stepped portion has substantially a same height as the first stepped portion.

Takekado discloses:

The disc device according to claim 4, wherein the fourth stepped portion has substantially a same height as the first stepped portion (figure 1, substantially circular portion C is the same height as first step portion [outermost elevated portions between items 44]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to create the center portion of the cover to be the same height of the first stepped portion, as taught by Takekado, because this will help to stabilize the airflow along the inner and outer perimeter of the stepped portion of the case, therefore stabilizing vibrations.

Regarding claims 6 and 17, Butler fails to specifically disclose:

Wherein a ratio of a height difference between the first and second arcuate stepped portions to a height difference between the first and third arcuate stepped portions falls within a range of 0.3 to 0.85.

Regarding claim 7 and 18, Butler fails to specifically disclose:

Wherein a ratio of a radial width of the second arcuate stepped portion to a radial width of the third arcuate stepped portion falls within a range of 0.3 to 0.9.

However, it would have been obvious, as a matter of design choice to one of ordinary skill in the art at the time the invention was made, in the course of routine engineering optimization/experimentation to design the height differences within these ranges.

Moreover, absent a showing of criticality, i.e., unobvious or unexpected results, the relationships set forth in claims 6 and 7 are considered to be within the level of ordinary skill in the art.

It furthermore has been held in such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves

unexpected results relative to the prior art range(s); see *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Regarding claim 14, Butler et al disclose everything repeated from claim 1, however, Butler et al fail to specifically disclose:

(d) A stepped control portion located closer to the disc than the third stepped portion, the stepped control portion suppressing vibration of the outer periphery of the disc in a direction parallel to a surface of the disc.

Takekado discloses:

(d) A stepped control portion located closer to the disc than the third stepped portion, the stepped control portion suppressing vibration of the outer periphery of the disc in a direction parallel to a surface of the disc (figure 1, corner slots [44] act as stepped control portions).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the cover of Butler et al with control stepped portions for suppressing the vibrations on the outer periphery of the disc.

Claim 15 is rejected for the same reason as claim 2.

Claim 16 is rejected for the same reason as claim 3.

Claims 20 and 21 rejected under 35 U.S.C. 103(a) as being unpatentable over Butler et al, in view of Takekado, in further view of Hirasaka et al (US Publication Number 2002/0044375).

Regarding claim 20, Butler et al, in view of Takekado fail to disclose:



Wherein the stepped control portion is formed arcuate along an outer periphery of the first stepped portion.

Hirasaka et al. disclose:

Wherein the stepped control portion is formed arcuate along an outer periphery of the first stepped portion (figure 1, periphery along disc near arrow 22 is stepped closer to disc than the rest of the cover).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to create a stepped portion along the periphery of a rotating disc, as taught by Hirasaka et al. as this would help suppress vibrations along the outer periphery of a disc. Furthermore, this practice is well known in the art to suppress vibrations along the outer periphery of a rotating disc.

Regarding claim 21, Butler et al, in view of Takekado fail to disclose:

Wherein the stepped control portion diametrically opposes a holding mechanism with the disc interposed therebetween, the holding mechanism being used to hold the head in a retracted position deviated from a position in which the head is positioned above the disc.

Hirasaka et al disclose:

Wherein the stepped control portion diametrically opposes a holding mechanism with the disc interposed therebetween (figure 2, holding portion indicated by f8, is diametrically opposed to the stepped control portion located near f4), the holding mechanism being used to hold the head in a retracted position deviated from a position in which the head is positioned above the disc.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to create the stepped control portion on the opposite side of the disc as the actuator arm, as taught by Hirasaka et al, because the actuator arm needs to rotate without rotation being limited by the stepped portion.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew G. Kayrish whose telephone number is 571-272-4220. The examiner can normally be reached on 8am - 5pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea Wellington can be reached on 571-272-4483. The fax phone

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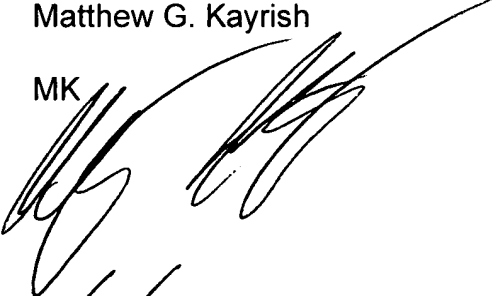
number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Matthew G. Kayrish

10/3/2006

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